

**Claims:**

1. A process for the preparation of protein hydrolysate from soy flour using fungal protease, said process comprising: preparing aqueous slurry of defatted soy flour having 6-12% w/v of solid content; hydrolyzing the said slurry using fungal protease at pH 7-8 and temperature  $43 \pm 5^{\circ}\text{C}$  for 1 to 3 hours to get 20-40% degree of hydrolysis (DH); further hydrolyzing using papain at temperature  $53 \pm 5^{\circ}\text{C}$  for 0.5 to 1.5 hours under stirring till 30 – 45% DH is obtained; inactivating residual enzyme in a known manner; separating the solids and drying the clarified supernatant thus obtained to get protein hydrolysate.
2. A process as claimed in claim 1, wherein the solid content in the slurry ranges from 8 – 12% w/v.
3. A process as claimed in claim 1, wherein the fungal protease is obtained from *Aspergillus* sp.
4. A process as claimed in claim 1, wherein *Aspergillus* is selected from the group comprising of *A. flavus*, *A. japonicus*, *A. niger* and *A. awamori*.
5. A process as claimed in claim 1, wherein the protein hydrolysate is obtained by double enzyme hydrolysis.
6. A process as claimed in claim 1, wherein the protein hydrolysate is obtained by hydrolyzing the slurry with proteolytic enzyme.
7. A process as claimed in claim 1, wherein the fungal protease ranges from 0.4 to 0.5% w/w of the soy flour.
8. A process as claimed in claim 1, wherein the protease hydrolysis is carried out at a pH of 7.2 to 7.6.

9. A process as claimed in claim 1, wherein the amount of papain ranges from 0.4 to 0.5% w/w of the soy flour.
10. A process as claimed in claim 1, wherein the hydrolysate produced has decreased bitterness.
11. A process as claimed in claim 1, wherein the threshold perception of bitterness is greater than 2g %.
12. A process as claimed in claim 1, wherein the protein hydrolysate produced has low mineral content.
13. A process as claimed in claim 1, wherein protein hydrolysate with 35 to 45% degree of hydrolysis (DH) is obtained in high yield from the raw material taken.
14. A process as claimed in claim 1, wherein protein hydrolysate obtained has creamy color and a yield of 60-67.0% (on protein basis).
15. A process as claimed in claim 1, wherein protein hydrolysate has 9.4% moisture, 10.5-11.0% nitrogen and 35-45% degree of hydrolysis.
16. A process as claimed in claim 1, wherein the protein hydrolysate obtained has 20-23 trypsin inhibitor units/mg activity, 95 to 98% Nitrogen Solubility Index, 0.6 to 1.0% of salt content and 2 to 2.2 % bitterness recognition threshold.
17. A process as claimed in claim 1, wherein lipxygenase and urease activities of the protein hydrolysate were not detectable.
18. A process as claimed in claim 1, wherein the amino acid composition of the protein hydrolysate was similar to the amino acid makeup of starting material.

19. A protein hydrolysate obtained from soy flour, comprising 20 to 23 trypsin inhibitor units/mg activity, 95 to 98% Nitrogen Solubility Index, 0.6 to 1.0% salt content, 2 to 2.2% bitterness recognition threshold, 9.4% moisture, 10.5 to 11% nitrogen, and 35 to 45 % degree of hydrolysis.
20. A protein hydrolysate as claimed in claim 19, comprising undetectable lipoxigenase and urease activities.
21. A protein hydrolysate as claimed in claim 19, wherein the protein hydrolysate has similar acid makeup as that of the starting material.
22. A protein hydrolysate as claimed in claim 19, has cream color.